REMARKS/ARGUMENTS

Claims 1-4, 6-14, 16-20, and 22-26 are pending in the application. Applicant, by this paper, amends claims 1, 11, and 17 and adds new claims 24-26. No new matter is added by amendment. Applicant respectfully requests reconsideration and allowance of all pending claims.

Discussion of Rejections Under 35 U.S.C. §101

Claims 11-14 and 16 were rejected under 35 U.S.C. §101 as allegedly directed to non-statutory subject matter. In particular, it is alleged that the "analysis means" and "modeling means" refer to software or program elements, while the preamble of the claim recites a system. *See, Office Action*, dated May 18, 2007, at pp. 2-3.

Applicant respectfully traverses the rejection and requests reconsideration and withdrawal of the rejection under 35 U.S.C. §101. Applicant respectfully contends that the Examiner fails to establish that the claims are directed to non-statutory subject matter. Applicant contends that the claims are statutorily permitted under 35 U.S.C. §112, sixth paragraph.

The patent laws, as provided by 35 U.S.C. §112, sixth paragraph, explicitly permit elements in a claim to be "expressed as a means or step for performing a specified function, without the recital of structure, material, or acts in support thereof." 35 U.S.C. §112. The patent laws provide that "such claim will be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." *Id.* Therefore, claims having elements expressed as "means for performing a function" are statutorily permitted under 35 U.S.C. §112, sixth paragraph.

A claim limitation will be presumed to invoke 35 U.S.C. §112, sixth paragraph, if it meets the following 3-prong analysis:

(A) the claim limitations must use the phrase "means for" or "step for;"

(B) the "means for" or "step for" must be modified by functional language; and

(C) the phrase "means for" or "step for" must not be modified by sufficient structure, material, or acts for achieving the specified function.

A review of independent claims 11 and 16 indicate that the 3-prong analysis is met for the claim element beginning with "analysis means for" as well as the claim element beginning with "analysis means for."

Each of the claim elements explicitly includes the term "means for," and the means for is modified by functional language. Furthermore, the "means for" is not modified by sufficient structure, material, or acts for achieving the function.

The "means for" elements may be construed based on "corresponding structure, material, or acts described in the specification and equivalents thereof." *Id*. The first element of claim 11 can be construed based on structure described within Applicant's Specification for performing the function of "analyzing received signals to determine a correlation signal level at predetermined points in time and for determining a maximum signal level at a selected one of the predetermined points in time." Applicant's Specification describes the searcher as performing this function. *See, for example, Specification*, at paragraphs [0033] and [0037] of application as filed, and original claim 1.

Applicant's Specification also describes examples of structure that can be used to implement the searcher. Applicant's Specification states that "although the searcher 116 and signal analyzer 120 are illustrated as two separate blocks within the system 100, they may be in fact embodied in one physical component, such as a digital signal processor (DSP). They may also reside as program codes in the memory 104, such code being operated on by the CPU 102." *Id*., at paragraph [0029] of application as filed. Thus, Applicant's Specification provides at least two examples of structure for the searcher. A first example is where the searcher is implemented as a DSP. A second example is where the searcher is implemented as program code stored in memory and operated on by the CPU.

Similarly, the second element of claim 11 can be construed based on structure described within Applicant's Specification for performing the function of "generating a second-order mathematical model of a predetermined response function using the maximum signal level…and further for determining a time of arrival of the received signals based on the time associated with the peak correlation signal level and an offset time encoded in the received signals." Applicant's Specification describes the modeling processor, alternatively referred to as the signal analyzer, as performing this function. *See, for example, id*., at paragraph [0026].

Applicant's Specification also describes the modeling processor as capable of being implemented as a DSP or as program code stored in memory and operated on by the CPU. *See, id*., at paragraph [0029] of application as filed. Applicant thus provides at least two examples of structure for the second means for element in claim 11.

The elements of claim 16 are interpreted in much the same manner as the elements of claim 11. Examples of structure for the means for elements of claim 16 are also found in paragraph [0029] of the application as filed.

Therefore, the system recited in claims 11-14 and 16 are statutorily permitted by explicit language in 35 U.S.C. §112, sixth paragraph. Furthermore, Applicant's Specification, as filed, provides examples of structure that allow the means for elements of claims 11-14 and 16 to be properly construed. Claims 12-14 depend from claim 11 and are believed to be directed to statutory subject matter at least based on their dependence from claim 11.

Therefore, claims 11-14 and 16 are directed to statutory subject matter. Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. §101 of claims 11-14 and 16.

Discussion of Rejections Under 35 U.S.C. §102

Claims 1-4, 6-14, 16-20, and 22-23 were rejected under 35 U.S.C. §102(a) as allegedly anticipated by EP 1089452 to Freiberg, et al. (hereinafter Freiberg).

In order for a claim to be anticipated, a single prior art reference must describe, either expressly or inherently, each and every element as set forth in the claim. The Examiner alleges that all of the claim elements are disclosed in Freiberg. Applicant respectfully traverses the rejection, as Freiberg fails to describe at least one claimed feature from each of the claims. Applicant respectfully requests reconsideration and allowance of claims 1-4, 6-14, 16-20, and 22-23.

Claim 1 recites "[a] system for determining the time of arrival in a wireless communication system." The system includes "a modeling processor operable to generate a second order polynomial mathematical model of a predetermined response function using the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time, the modeling processor using the mathematical model to determine a time associated with a peak correlation signal level, and further operable to determine a time of arrival of the received signals based on the time associated with the peak correlation signal level and an offset time encoded in the received signals." Freiberg fails to describe at least this claimed feature.

Freiberg describes a method of estimating a timing error in a received signal. *Freiberg*, Abstract. The timing error is used in a feed-forward tracking loop to correct a

timing error in the phase of a locally generated spreading sequence. Freiberg states: "[T]he timing error estimation circuitry 4 in combination with the multi-path interpolators 6a to 6_N provide fractional sample timing corrections. The timing corrections are employed in a feed-forward basis as shown in Figure 1. In this structure the fractional timings are passed to respective interpolators which produce an output corrected by the fractional sample error." *Id.*, at paragraph [0060].

Freiberg fails to describe any structure or process which can be used to "determine a time of arrival of the received signals based on the time associated with the peak correlation signal level and an offset time encoded in the received signals," as claimed. In contrast, Freiberg is only concerned with determining an error of a locally generated spreading sequence to a received signal. Freiberg fails to describe or even discuss a time of arrival. Furthermore, Freiberg fails to describe or even discuss an offset time encoded in the received signals. Freiberg fails to include any description of such an offset time, in part, because the timing error described in Freiberg is a relative timing error that has no relation to an offset time of a particular received signal. The tracking loop described in Freiberg uses the relative time offset (timing error) as a correction signal to a tracking loop. The system of Freiberg has no need to know an offset time of the received signal, and Freiberg does not describe such an offset, much less the ability to determine the offset as encoded in the received signal.

Freiberg is directed to determining the timing error and thus does not describe any time of arrival of a received signal, nor does Freiberg describe determining a time of arrival of a received signal.

Freiberg fails to describe each and every claimed element in the manner set forth in the claims. Thus, Freiberg does not anticipate claim 1. Applicant respectfully requests reconsideration and allowance of claim 1.

Claim 11 includes features similar to those discussed above in relation to claim 1. Claim 11 is believed to be allowable at least for the reasons discussed above in relation to claim 1. Freiberg fails to describe every element of claim 11 in the manner set forth in the claim.

Claim 10 recites "[a] system for determining the time of arrival in a wireless communication system." The system includes "a modeling processor operable to *generate an nth order polynomial, n being greater than two*, mathematical model of a predetermined response function using the maximum signal level and correlation signal levels from

predetermined points in time adjacent the selected time, the modeling processor using the mathematical model to determine a time associated with a peak correlation signal level, the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time being used to determine coefficients in the mathematical model." (*emphasis added*).

The Examiner contends that Freiberg describes a polynomial of order greater than 2 and cites to Freiberg, at paragraph [0049]. However, the cited paragraph from Freiberg expressly describes a second order polynomial. The cited paragraph from Freiberg describes a parabola "defined by the general equation $at^2 + bt + c = R$." *Freiberg*, at paragraph [0049]. This equation in Freiberg has an order of 2, and thus expressly fails to describe "an nth order polynomial, *n being greater than two*" as claimed. Freiberg fails to provide any description of a polynomial having an order greater than 2 that is used as a mathematical model of a predetermined response function. Freiberg fails to describe every feature of claim 10 in the manner set forth in the claim, and thus Freiberg fails to anticipate the claim.

Claim 16 includes features similar to those discussed above in relation to claim 10, and is believed to be allowable at least for the reasons discussed above in relation to claim 10. Freiberg fails to describe every element of claim 16 in the manner set forth in the claim.

Claim 23 recites a method for determining signal time of arrival that includes "generating an nth order mathematical model, n being greater than two, of a predetermined response function," and is believed to be allowable at least for the reasons discussed above in relation to claim 16. Freiberg fails to describe every element of claim 16 in the manner set forth in the claim.

Claim 17 recites "[a] method for determining signal time of arrival in a wireless communication system. The method includes "determining an offset time encoded within the received signals, the offset time identifying a source of the received signals." In an example described in Applicant's Specification, each pilot PN can encode its associated offset time that identifies the BTS from which it originates. This claimed feature is not described in Freiberg.

As discussed above in relation to claim 1, Freiberg fails to describe any manner of determining an offset time associated with a received signal. Freiberg, in general, fails to even describe any signal that encodes an offset time, and thus logically cannot describe such an offset time that identifies a source of the received signals.

Freiberg fails to anticipate claim 17 because Freiberg fails to describe at least this claimed element. Applicant respectfully requests reconsideration and allowance of claim 17.

Claims 2-4, 6-9, 12-14, 18-20, and 22 depend, either directly or indirectly, from one of claims 1, 11, or 17 and are believed to be allowable at least for the reason that they depend from an allowable base claim. Applicant respectfully requests reconsideration and allowance of claims 2-4, 6-9, 12-14, 18-20, and 22.

Discussion of New Claims

Applicant, by this paper, adds new claims 24-26. No new matter is added by the new claims.

Support for claim 24 can be found throughout Applicant's Specification, as filed. In particular, support can be found, for example, at paragraph [0026] and [0032].

Support for claim 25 can be found throughout Applicant's Specification, as filed. In particular, support can be found, for example, at paragraph [0027].

Support for claim 26 can be found throughout Applicant's Specification, as filed. In particular, support can be found, for example, at paragraphs [0046] through [0047].

Each of claims 24-26 is believed to be allowable at least for the reason that it depends from an allowable base claim. The features in each of claims 24-26 are also believed to be patentably distinct over the references cited by the Examiner.

Applicant respectfully requests allowance of new claims 24-26.

CONCLUSION

Applicant believes that all claims pending in the application are allowable. Applicant therefore respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Applicant petitions the Director of the United States Patent Office to extend the time for reply to the Office Action dated May 18, 2007 for one month and authorizes the charge as set forth in §1.17(a) to Deposit Account No. 17-0026. Applicant believes that the instant response is filed within the period for response provided in the Office Action of May 18, 2007 extended by one month as provided for under 37 CFR 1.136.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 17-0026. If a fee is required for an extension of

time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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